

SHORTS

Sympathy for the Devil

This amusing name was given to a conference held in Berlin in April 1984 attended by various radical science journals on the theme of alternative and traditional uses of Computer technology. The papers associated with the conference have been made available in Britain by the comrades of the Radical Science Journal at the exorbitant cost of £6.00 for some 40 pages. The translation of some of the papers also leaves a lot to be desired. However Robert Young and Les Levidow's paper "How Do Technologies Embody Values" is very interesting. I expect that some of these papers will find their way into the next issue of Radical Science Journal on Computers, if not I shall try to reprint otherwise unavailable papers (suitably amended) in future issues of Black Chip, provided RSJ don't object. Radical Science Journal's latest issue does have some interesting articles on computers and I was hoping that we were going to have a review written on them but this looks like being held over until our next issue. RSJ can be contacted at 26, Freegrove Road, London, N7

Electronics for Peace

I have been kindly sent two copies of the Electronics for Peace Newsletter by Louis Barman. Issue 5, April 1985 is well worth getting if you're interested as it is properly printed and laid-out, with some good articles. Subscriptions are £5.00 (£3.00 for unwaged), and the money should be sent to Townsend House, Green Lane, Marshfield, Chippenham, Wilts, SN14 8JW

INPUT

The EfP Newsletter also has a short mention for the Initiative for the Peaceful Use of Technology, who can be contacted at Box 248, Station B, Ottawa, Canada, K1P 6C4. The contents of their first newsletter look very interesting and I shall be writing to them to see if they want to do an exchange, with mutual reprints if desired.

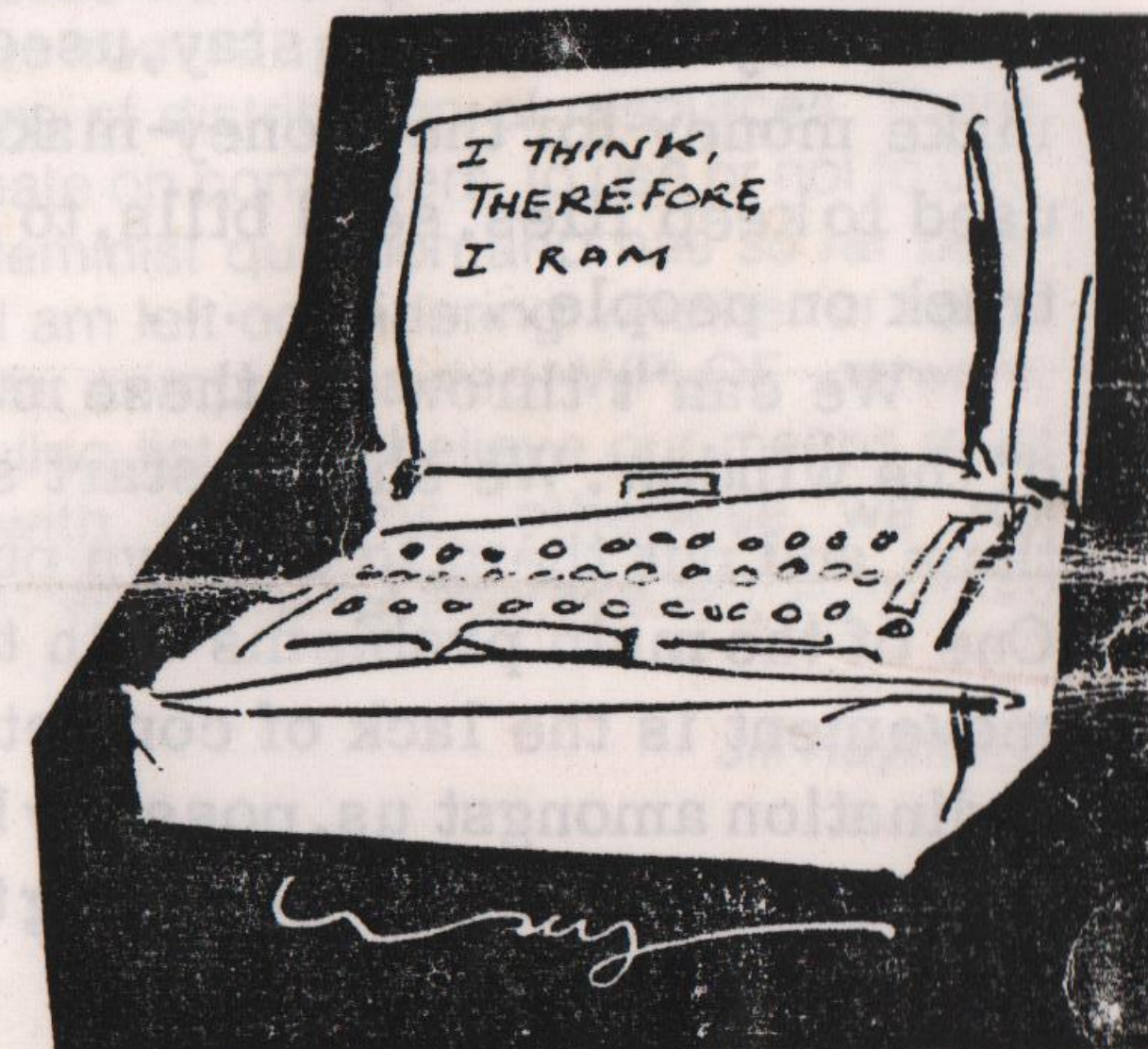
INTERFACE ASSOCIATES

SWINDLER. A numeracy program for children aged 7-12. Make sure you get the right change from the corrupt shopkeeper. Two levels of difficulty.

MATCHBOX. Children aged 3-6 can learn to match shapes, colours and number patterns with a minimum of adult supervision. No prompts or scoreboards which the children can't read. Uses sound to judge right and wrong answers.

Each program for BBC/B. £7.50 tape, £9.50 disk (40-track SSSD).

Interface Associates, 5 Christchurch drive, Blackwater, Camberley, Surrey GU17 0HA.



Tape:
BBC/B £5
48K Spectrum £5

Disk:
BBC/B only £7
40-track,
single sided,
single density.

Prices include p&p.

**NUCLEAR
DETERRENT?**

BBC Micro Model B
Interface Associates



How's the response time on this new system?"

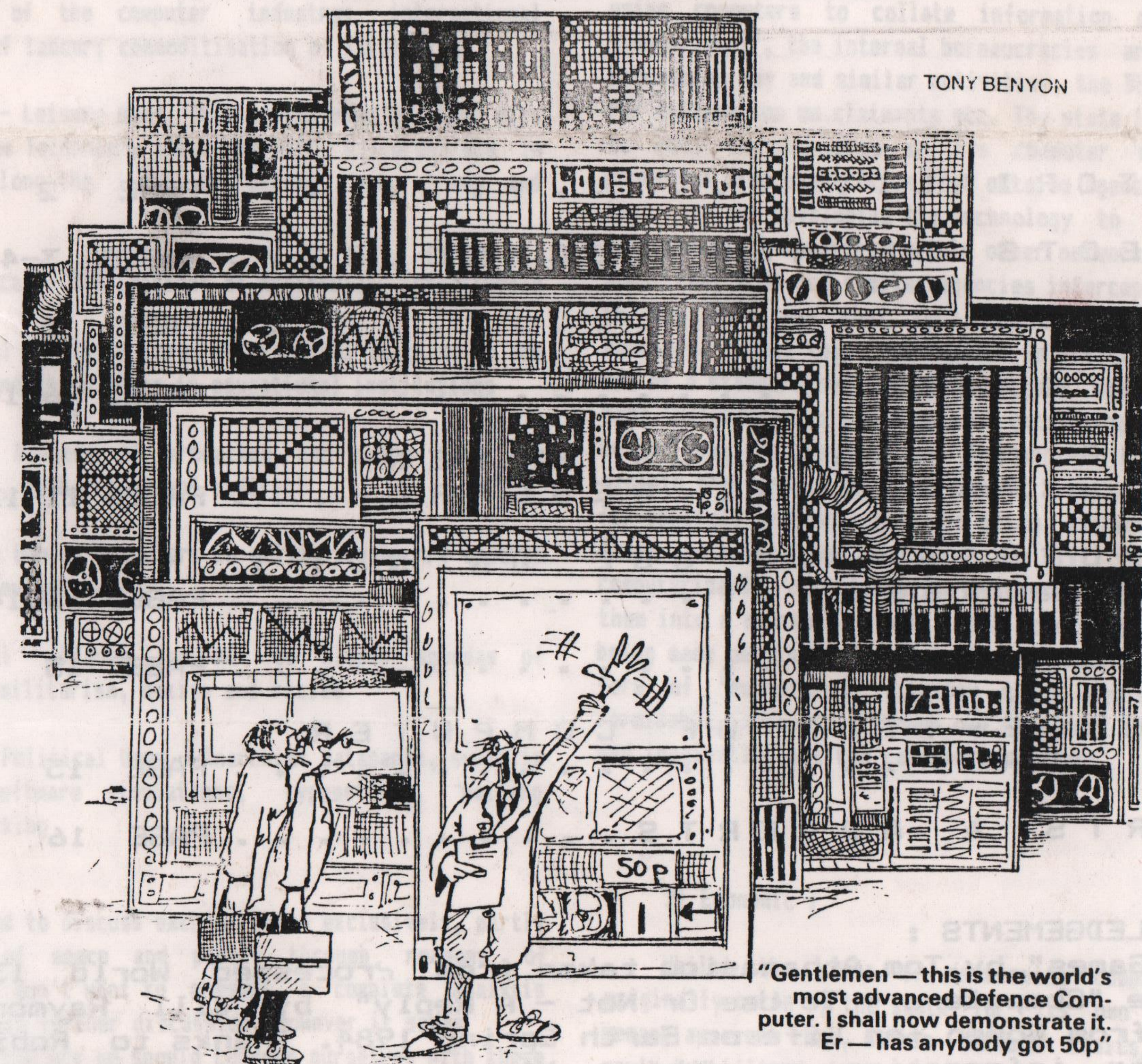
The program is available from
Newcastle-upon-Tyne firm
Magination. tel: 091 2737362.

Also available
directly from
Interface Associates.

BLACK CHIP

a journal of computing for Anarchists

1985 ISSUE 2 60p



"Gentlemen — this is the world's most advanced Defence Computer. I shall now demonstrate it. Er — has anybody got 50p?"

Editorial

Welcome to the second printed issue of Black Chip. I hope you will all enjoy reading this issue. There are no software or hardware reviews in this issue, although I have included a few comments in the Updates section and I was hoping to have included a review of Leedssoft's "Picket" game but I haven't been able to get hold of a copy yet. As it is only for the BBC micro I would be more than pleased to hear from any of our Beeb readers who would like to review a copy should I get hold of it. Similarly there is little original material in this issue apart from my overview piece. This isn't entirely my fault as certain persons did promise articles but they haven't arrived here yet. Luckily this isn't too much of a hardship as I've re-printed Tom Athanasiou's excellent article from the latest issue of Processed World. (If anyone wants copies of this magazine then let me know, if I remember correctly they cost about £1.25). Anyway, the next issue might contain the second part of my article, an article on the radical uses of networks, Police uses of computers and a whole lot more. Astute readers will notice that this issue is 4 pages longer than the previous issue. This is due entirely to the quantity of material I wanted to print and the very welcome numbers of subscriptions sent in, for which thanks.

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ACKNOWLEDGEMENTS :

"Mind Games" by Tom Athanasiou taken from Processed World 13. Article "Computers - To Use Or Not - A Reply" by Jill Raymond taken from Women for Life on Earth Spring 1984. Thanks to Robin for the information on "Using Micros for Power Structure Research".

It has been suggested that we hold a meeting in London soon for interested parties, an excellent suggestion. If anyone would like to arrange a suitable venue and time I will be only too happy to circulate all subscribers with the details. I must confess that with work, Open University, publishing and life in general, I haven't at the moment got the time to arrange the meeting myself, come to think of it there's no reason why I should have to do all the work myself anyway!!!! Related to which, I am a little concerned that what started out as a cosy discussion forum is turning into a commodity which people passively consume. This isn't the intention at all. As I have to photocopy each issue I don't want to waste my time producing something that just gets filed or chucked away. Whilst there is, of course, no obligation for readers to contribute material, I'm sure you'd all prefer to read items from as many people as possible. To encourage contributions all contributors will get an extra issue added to their subscription for every item printed.

Well that's enough grumbles, time to move on to more interesting stuff....

ASPECTS OF THE NEW TECHNOLOGY

Richard Alexander

In the editorial of the last Black Chip I promised that there would be fewer hardware reviews and more political analysis in this issue. As a contribution to that analysis I would like to give a brief overview of the areas that Black Chip and by implication the anarchist movement itself should concern itself with. Using the subheading "A Journal of Computing for Anarchists" is slightly misleading as it seems to indicate a more practical or technical approach to the subject, and one that directs its gaze at a particular form of technology to the exclusion to all others. As the compiler of the journal I'm more to blame for this misleading impression than anyone else, so I'm using this article to rectify the situation, and if anyone can suggest an alternative subheading for Black Chip I'd like to hear from you.

I'd like to propose several main areas that an analysis could be sub-divided into (although these should not be considered as existing in isolation from each other) :

- 1) Political - Governmental uses based around the couplet : Power/Knowledge: police/bureaucracies; monopolisation of data resources; legal strategies; snooping;
- 2) Economic - Capital using technologies to replace living labour with dead labour in pursuit of Profit; the practices of the computer industry; international division of labour; commoditisation of information
- 3) Social - Leisure uses, Utilitarian uses by clubs etc; How the New Technology interacts with differentials in society, along the lines of gender, age, class and culture
- 4) Philosophical - Implications of Artificial Intelligence
- 5) Educational - Both in terms of practical learning to use machines and their place in educational institutions
- 6) Health - Dangers of producing and using the New Technology, both direct and indirect
- 7) Military - Use of computers in military weaponry systems and war simulations
- 8) Ideological - Hidden and not so hidden agendas of software: militarism, sexism and racism
- 9) Practical Political Uses - Anarchist databanks, bulletin boards, software simulations, typesetting, mailing lists, hacking

I don't intend to discuss each of these exclusively, partly through reasons of space and partly through reasons of competence. Also I don't want to present a complete analysis that would close off further discussion. However it seems reasonable to outline why we should concern ourselves with these areas and ways in which we can possibly intervene in them. The order of these topics is arbitrary and doubtless there will much left outside them and as much between them.

1) The Political :

Historically computers, using the common-sense meaning, owe their existence to the needs primarily to States, in particular to the American and British states. They were created to fulfill specific needs in war-time, those of intelligence interception and decoding, although the theoretical work that lead to the possibility of their creation was the work of independent intellectuals, initially outside State control. Once the ground was cleared by this work the way was open to the creation of increasingly sophisticated machines, although it wasn't until the development of first transistors and finally microchips, themselves a product of the need to miniaturise for the space programme, that mass-production of reasonable size machines became feasible. All these developments were financed by the state and in turn the state was the main beneficiary.

The specifically military uses I shall deal with in a separate section, but the main uses the State has for computers are manifold and linked to its need for the collection and organisation information to maintain its coercive and co-ordinatory roles in society. Thus the security forces are using computers to collate information on "criminals" and "subversives", the internal bureaucracies are using them for processing pay and similar activities, the DHSS are using them for information on claimants etc. The state is desperately keen to keep the workings of its computer systems secret and protected from penetration from outside agencies. At the same time they are developing the technology to intercept computer data that is transmitted within other networks and one cannot doubt that NSA and similar agencies intercept commercial data in the same way that they intercept international audio messages. Indeed this interception is greatly facilitated by the use of a standardised code for letters etc called the ASCII code. Naturally there are ways of encrypting messages and what better than computers to use to protect data !!! This may explain the various moves to prevent a reliable security system for publicly available software being allowed on the market. There can be no doubt that the state will further develop its computerisation of information systems and ways of integrating them into a enormous network, with access to innumerable files being made possible. Obviously for anyone participating in any form of "subversive" activity these systems represent a formidable obstacle, although one shouldn't let one's paranoia and imagination get too carried away, yet!

2) Economic :

Whilst the costs of developing computer systems were originally borne by the state for its own benefit, it soon became apparent that, within certain limits, this technology could be utilised also by capital, both for its own ends and also as profitable commodities in their own right. Although the original manufacturers, like IBM and ICL tended to be large

Hardware Reviews

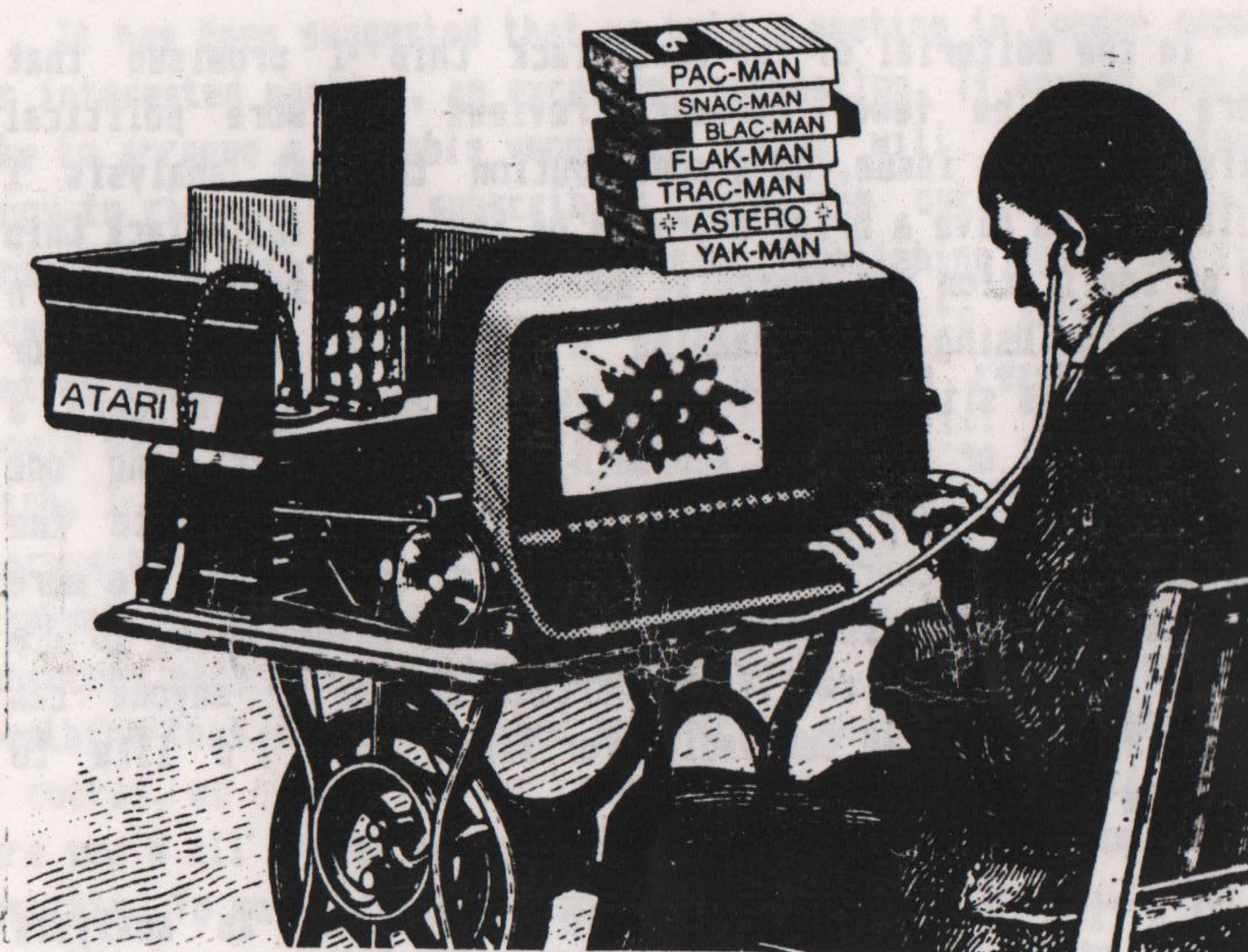
As can be expected, the rave review of the Rotronics Wafadrive, has turned out to be just a little too enthusiastic. The equipment is still functioning up to a point but I can't re-use re-formatted wafas and even worse I can't load files saved on a wafa in the "a" drive in the "b" drive, all of which makes using the kit rather awkward. Rotronics have offered to realign the heads in the drives but as I'm using the gear rather a lot at the moment I can't afford to be without it for two or three weeks. Also since writing the review there has been a deluge of disc drives and interfaces for the Spectrum, some of which are quite reasonably priced. Although I haven't had any experience of using any of them I'd have to recommend that anyone interested in mass-storage on the Spectrum should really consider getting discs and not wafas or microdrives. The added advantages of discs include (in most models) faster loading time, better reliability, better file handling and the ability to handle larger files with random access. Having said which I'm stuck with the Wafadrive unless someone cares to send me a cheque for £200 !!!

Software Reviews

You will be pleased to hear that the Computer Press has been most generous with its praise of the Worldwide Nuclear Weapons tape, although a few did comment that it might be a bit awkward to use for schoolkids. We look forward to future software from Lancaster, especially review copies!!!

Interface Associates

The EfP Newsletter has an update on Mike Gascoigne's activities. His latest venture is to create a section on Prestel to provide information on restaurants which cater for Vegetarians. This is on page 53050 of Prestel and Mike is looking for subscribers. To encourage this he is willing to pay commission to anyone who can sell pages to first-time subscribers. If you are familiar with the Prestel system, and even better can demonstrate it to interested vegetarian restaurant owners, contact Mike at Interface Associates, 5, Christchurch Drive, Blackwater, Camberley, Surrey, GU15 0HA (0252 - 874489). Also I'm sure that Mike would appreciate selling more copies of his software too.

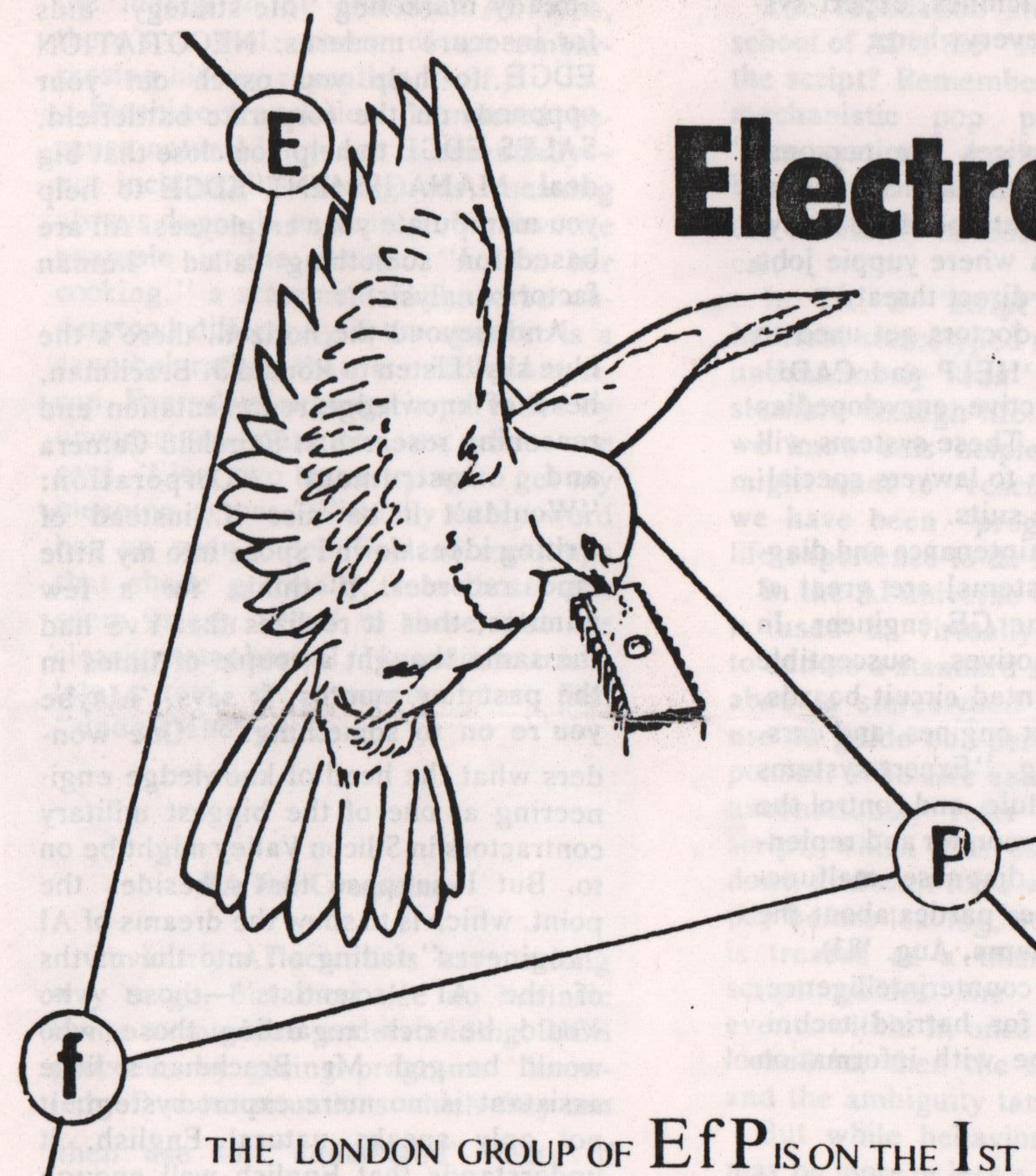


3) The Social :

It would, indeed, be an ill-wind that did nobody any good, and so it is with the New Technologies. Admittedly the "good" is at best marginal compared with the "harm" but for certain people there are benefits. In particular those with disabilities which make communication difficult, can use micros, linked by modems and the phone lines, for communicating with the outside world. All manner of voluntary organisations can use very simple and relatively cheap systems for word-processing, mail-outs, membership files, accounts etc, taking advantage of the vast amounts of easy to use software that is available. All this can, in the long term save both time and money, both of which are at a premium in such organisations. Obviously these systems will be mostly used by the numerate and by the better-off, but even less well-off and disadvantaged and oppressed groups can, if organized, get access and use them. (The return of the liberal!)

Much has been made, in certain quarters, and, I believe, quite correctly, of the way that women, although predominant amongst the workforces that actually manufacture computers, are actively discouraged, by a variety of social and economic pressures, from using the new technology. This is due to the fact that in educational centres computers are seen as a mathematical or scientific subject which are traditionally seen as being male preserves or at best girls are introduced to them in the form of word-processors, where understanding the workings of the machine or how to control/program it are irrelevant. This is mirrored in the work-place where the New Technology has meant for a relatively few men a creative challenge, whereas for most women and many men they represent an alien and alienating force. In a different way the lack of provision of languages other than English has made it more difficult for people speaking other languages to use computers and the lack of non-Roman script has further compounded this obstacle to use, although there have been notable exceptions to this.

To be continued in the next issue of Black Chip.



Electronics for Peace LONDON GROUP

Electronics for Peace is a network of people, principally working in the electronics and computing industries, who are concerned about the military implications of their profession. It is open to all those with an interest in electronics or computing.

FOR MORE INFORMATION PLEASE CONTACT:

LOUIS BARMAN

89 ACRE ROAD
KINGSTON UPON THAMES
SURREY KT2 6ES
TEL: 01 541 1825

THE LONDON GROUP OF EfP IS ON THE 1ST THURSDAY EACH MONTH AT 7.30 PM
AT: LONDON NEW TECHNOLOGY NETWORK, 68-100 ST. PANCRAS WAY (off Camden Road) LONDON NW1 9ES
TUBE: CAMDEN TOWN B R: CAMDEN ROAD

The world of artificial intelligence research can be divided up a lot of different ways, but the most obvious split is between researchers interested in being god and researchers interested in being rich. The members of the first group, the AI "scientists," lend the discipline its special charm. They want to study intelligence, both human and "pure" by simulating it on machines. But it's the ethos of the second group, the "engineers," that dominates today's AI establishment. It's their accomplishments that have allowed AI to shed its reputation as a "scientific con game" (*Business-Week*) and to become as it was recently described in *Fortune* magazine, "the biggest technology craze since genetic engineering."

The engineers like to bask in the reflected glory of the AI scientists, but they tend to be practical men, well-schooled in the priorities of economic society. They too worship at the church of machine intelligence, but only on Sundays. During the week, they work the rich lodes of "expert systems" technology, building systems without claims to consciousness, but able to simulate human skills in economically important, knowledge-based occupations. The AI market is now expected to reach \$2.8 billion by 1990. AI stocks are rising at an annual rate of 30%.

Expert Systems

Attracting the attention of both AI scientists and profit-minded entrepreneurs are the so-called "expert systems." (An expert is a person with a mature, practiced knowledge of some aspect of the world. Expert systems, computer programs with no social experience, cannot really be expected at anything; they can have no mature, practiced knowledge. But in the anthropomorphized language of AI, where words like "expert," "understanding," and "intelligence" are used with astounding—and self-serving—naïveté, accuracy will not do. Mystification is good for business.)

Expert systems typically consist of two parts: the "knowledge base" or "rule base," which describes some little corner of the world—some "domain" or "microworld"; and the "inference engine," which climbs around in the knowledge base looking for connections and correspondences. "The primary source of power...is informal reasoning based on extensive knowledge painstakingly culled from human experts," explained Doug Lenat in an article that appeared in *Scientific American* in Sept. '84. "In most of the programs the knowledge is encoded in the forms of hundreds of if-then rules of thumb, or heuristics. The rules constrain search by guiding the program's attention towards the most likely solutions. Moreover...expert systems are able to explain all their inferences in terms a human will accept. The explanation can be provided because decisions are based on rules taught by human experts rather than the abstract rules of formal logic."

MIND GAMES

Tom Athanasiou

The excitement about expert systems (and the venture capital) is rooted in the economic significance of these "structural selection problems." Expert systems are creatures of microworlds, and the hope is that they'll soon negotiate these microworlds well enough to effectively replace human beings.

Some recent expert systems, and their areas of expertise, are CADUCEUS II (medical diagnosis), PROSPECTOR (geological analysis), CATS-1 (locomotive trouble shooting), DIP-METER adviser (sample oil well analysis), and RI/XCON-XSEL (computer system sales support and configuration.) Note that the kinds of things they do are all highly technical, involve lots of facts, and are clearly isolated from the ambiguities of the social world.

Such isolation is the key. If our sloppy social universe can be "rationalized" into piles of predictable little microworlds, then it will be amenable to knowledge-based computerization. Like automated teller machines, expert systems may soon be everywhere:

- In financial services like personal financial planning, insurance underwriting, and investment portfolio analysis. (This is an area where yuppie jobs may soon be under direct threat.)
- In medicine, as doctors get used to using systems like HELP and CADUCEUS II as interactive encyclopedias and diagnostic aids. These systems will also be a great boon to lawyers specializing in malpractice suits.
- In equipment maintenance and diagnosis. "Expert [systems] are great at diagnosis," said one GE engineer. In addition to locomotives, susceptible systems include printed circuit boards, telephone cables, jet engines, and cars.
- In manufacturing. "Expert systems can help plan, schedule, and control the production process, monitor and replenish inventories... diagnose malfunctions and alert proper parties about the problem." (*Infosystems*, Aug. '83).
- In military and counterintelligence, especially as aids for harried technicians trying to cope with information overload.

But Do They Work?

If these systems work, or if they can be made to work, then we might be willing to agree with the AI hype that the "second computer revolution" may indeed be the "important one." But do they work, and, if so, in what sense?

Many expert systems have turned out to be quite fallible. "The majority of AI programs existing today don't work," a Silicon Valley hacker told me flatly, "and the majority of people engaged in AI research are hucksters. They're not serious people. They've got a nice wagon and they're gonna ride it. They're not even seriously interested in the programs anymore."

Fortune magazine is generally more supportive, though it troubles itself, in its latest AI article, published last August, to backpeddle on some of its own inflated claims of several years ago. Referring to PROSPECTOR, one of the six or so expert systems always cited as evidence that human expertise can be successfully codified in sets of rules, *Fortune* asserted that PROSPECTOR's achievements aren't all they've been cracked up to be: "In fact, the initial discovery of molybdenum [touted as PROSPECTOR's greatest feat] was made by humans, though PROSPECTOR later found more ore."

Still, despite scattered discouraging words from expert critics, the AI engineers are steaming full speed ahead. Human Edge software in Palo Alto is already marketing "life-strategy" aids for insecure moderns: NEGOTIATION EDGE to help you psych out your opponent on the corporate battlefield, SALES EDGE to help you close that big deal, MANAGEMENT EDGE to help you manipulate your employees. All are based on something called "human factors analysis."

And beyond the horizon, there's the blue sky. Listen to Ronald J. Brachman, head of knowledge representation and reasoning research at Fairchild Camera and Instrument Corporation: "Wouldn't it be nice if...instead of writing ideas down I spoke into my little tape recorder...It thinks for a few minutes, then it realizes that I've had the same thought a couple of times in the past few months. It says, 'Maybe you're on to something.'" One wonders what the head of knowledge engineering at one of the biggest military contractors in Silicon Valley might be on to. But I suppose that's besides the point, which is to show the dreams of AI "engineers" fading off into the myths of the AI "scientists"—those who would be rich regarding those who would be god. Mr. Brachman's little assistant is no mere expert system; it not only speaks natural English, it understands that English well enough to recognize two utterances as being about the same thing even when spoken in different contexts. And it can classify and cross-classify new thoughts, thoughts which it can itself recognize as interesting and original. Perhaps, unlike Mr. Brachman, it'll someday wonder what it's doing at Fairchild.

Machines Can't Talk

The Artificial Intelligence program at UC Berkeley is trying to teach computers to do things like recognizing a face in a crowd, or carrying on a coherent conversation in a "natural" language like English or Japanese. Without such everyday abilities—abilities so basic we take them completely for granted—how could we be said to be intelligent at all? Likewise machines?

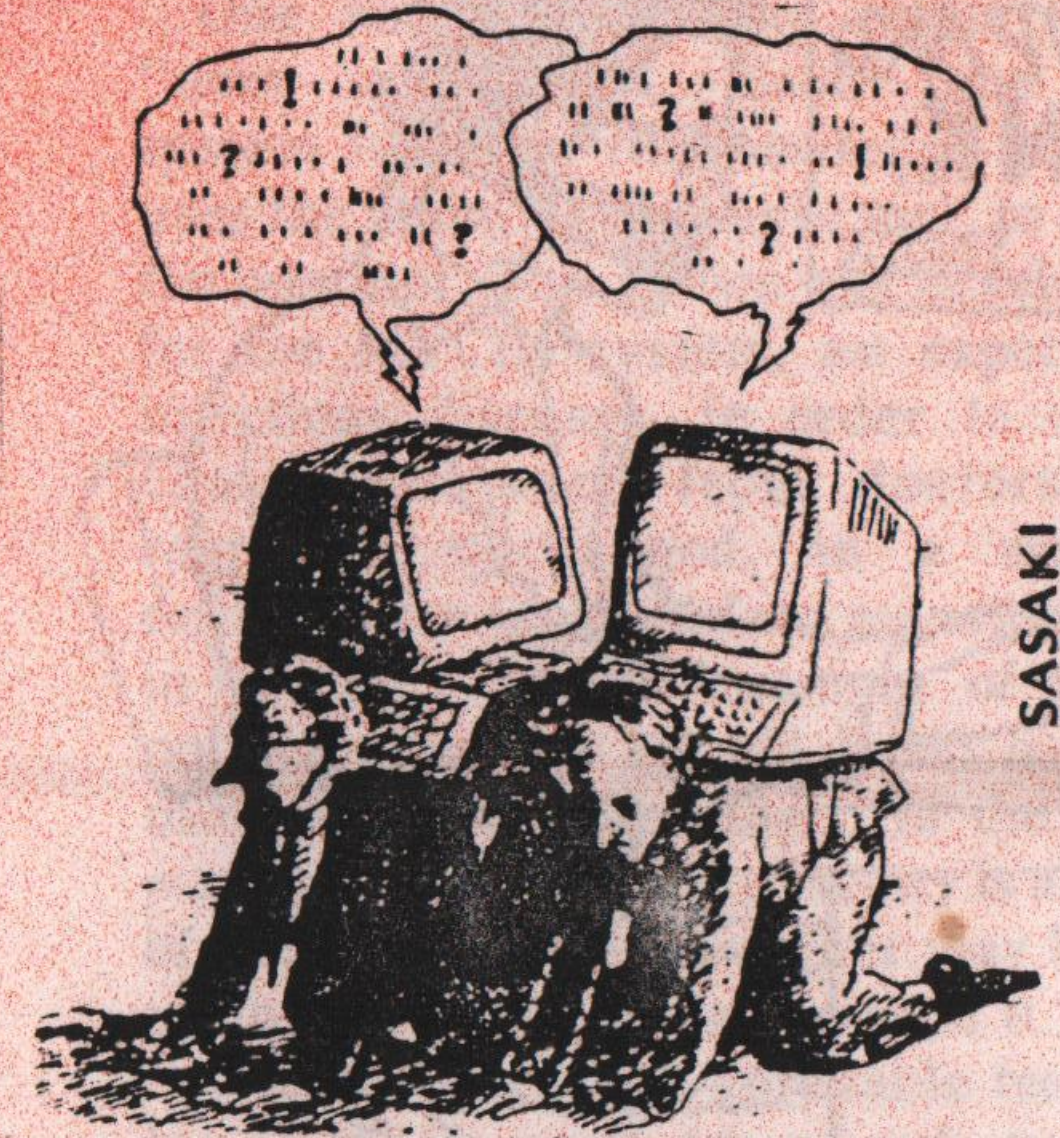
The culture of AI encourages a firm, even snide, conviction that it's just a matter of time. It thrives on exaggeration, and refuses to examine its own failures. Yet there are plenty. Take the understanding of "natural languages" (as opposed to formal languages like FORTRAN or PASCAL.) Humans do it effortlessly, but AI programs still can't—even after thirty years of hacking. Overconfident pronouncements that "natural language understanding is just around the corner" were common in the 50's, but repeated failure led to declines in funding, accusations of fraud, and widespread disillusionment.

(Today's AI businessmen are again claiming an imminent solution. In the November issue of *Datamation*, directly across from an excellent article entitled "The Overselling of Expert Systems," lies a full page ad for a microcomputer-based system that "speaks English." Oh? One wonders, then, what Stanford will be doing with all the megabucks it just received to study "situated language" [language in context]. With all the money to be made of AI hype, there's a real chance of an embarrassing history repeating itself.)

Machine translation floundered because natural language is essentially—not incidentally—ambiguous; meaning always depends on context. My favorite example is the classic, "I like her cooking," a statement likely to be understood differently if the speaker is a cannibal rather than a middle American. Everyday language is pervaded by unconscious metaphor, as when one says, "I lost two hours trying to get my meaning across." Virtually every word has an open-ended field of meanings that shade gradually from those that seem utterly literal to those that are clearly metaphorical. In order to translate a text, the computer must first "understand" it.

TA For Computers

Obviously AI scientists have a long way to go, but most see no intrinsic limits to machine understanding. UCB proceeds by giving programs "knowledge" about situations which they can then use to "understand" texts of various kinds.



Yale students have built a number of "story understanding systems," the most striking of which is "IPP," a system which uses knowledge of terrorism to read news stories, learn from them, and answer questions about them. It can even make generalizations: Italian terrorists tend to kidnap businessmen; IRA terrorists are more likely to send letter bombs.

How much can we expect a program like IPP to learn? How long will it be before its "understanding" can be "generalized" from the microworld of terrorism to human life as a whole? In what sense can it be said to understand terrorism at all, if it cannot also understand misery, violence, and the politics of frustration? If it isn't really understanding anything, then what exactly is it doing, and what would it mean for it to do it better? Difficult questions these.

The foundation stone of this "IPP" school of AI is the "script." Remember the script? Remember that particularly mechanistic pop psychology called "Transactional Analysis"? It too was based upon the notion of scripts, and the similarity is more than metaphorical.

In TA, a "script" is a series of habitual stereotyped responses that we unconsciously "run" like tapes as we stumble through life. Thus if someone we know acts helpless and hurt, we might want to "rescue" them because we have been "programmed" by our life experience to do so.

In the AI universe the word "script" is used in virtually the same way, to denote a standard set of expectations about a stereotyped situation that we use to guide our perceptions and responses. When we enter a restaurant we unconsciously refer to a restaurant script, which tells us what to do—sit down and wait for a waiter, order, eat, pay before leaving, etc. The restaurant is treated as a microworld, and the script guides the interpretation of events within it; once a script has been locked in, then the context is known, and the ambiguity tamed.

But while behavior in a restaurant may be more or less a matter of routine, what about deciding which restaurant to go to? Or whether to go to a restaurant at all? Or recognizing a restaurant when

you see one? These problems aren't always easy for humans, and their solution requires more than the use of scripts. In fact, the research going on at Berkeley is specifically aimed at going beyond script-bound systems, by constructing programs that have "goals" and make "plans" to achieve those goals. Grad students even torture their programs by giving them multiple conflicting goals, and hacking at them until they can satisfy them all.

Anti-AI

The academic zone of AI is called "cognitive studies." At UC Berkeley, however, cognitive studies is not just AI; the program is interdisciplinary and includes philosophers, anthropologists, psychologists, and linguists. (The neurophysiologists, I was told, have their own problems.) Specifically, it includes Hubert Dreyfus and John Searle, two of the most persistent critics of the whole AI enterprise. If Cal hasn't yet made it onto the AI map (and it hasn't), it's probably fair to say that it's still the capital of the anti-AI forces, a status it first earned in 1972 with the publication of Dreyfus's *What Computers Can't Do*.

Dreyfus thinks he's winning. In the revised edition of his book, published in 1979, he claimed that "there is now general agreement that...intelligence requires understanding, and understanding requires giving the computer the background of common sense that adult human beings have by virtue of having bodies, interacting skillfully in the material world, and being trained into a culture."

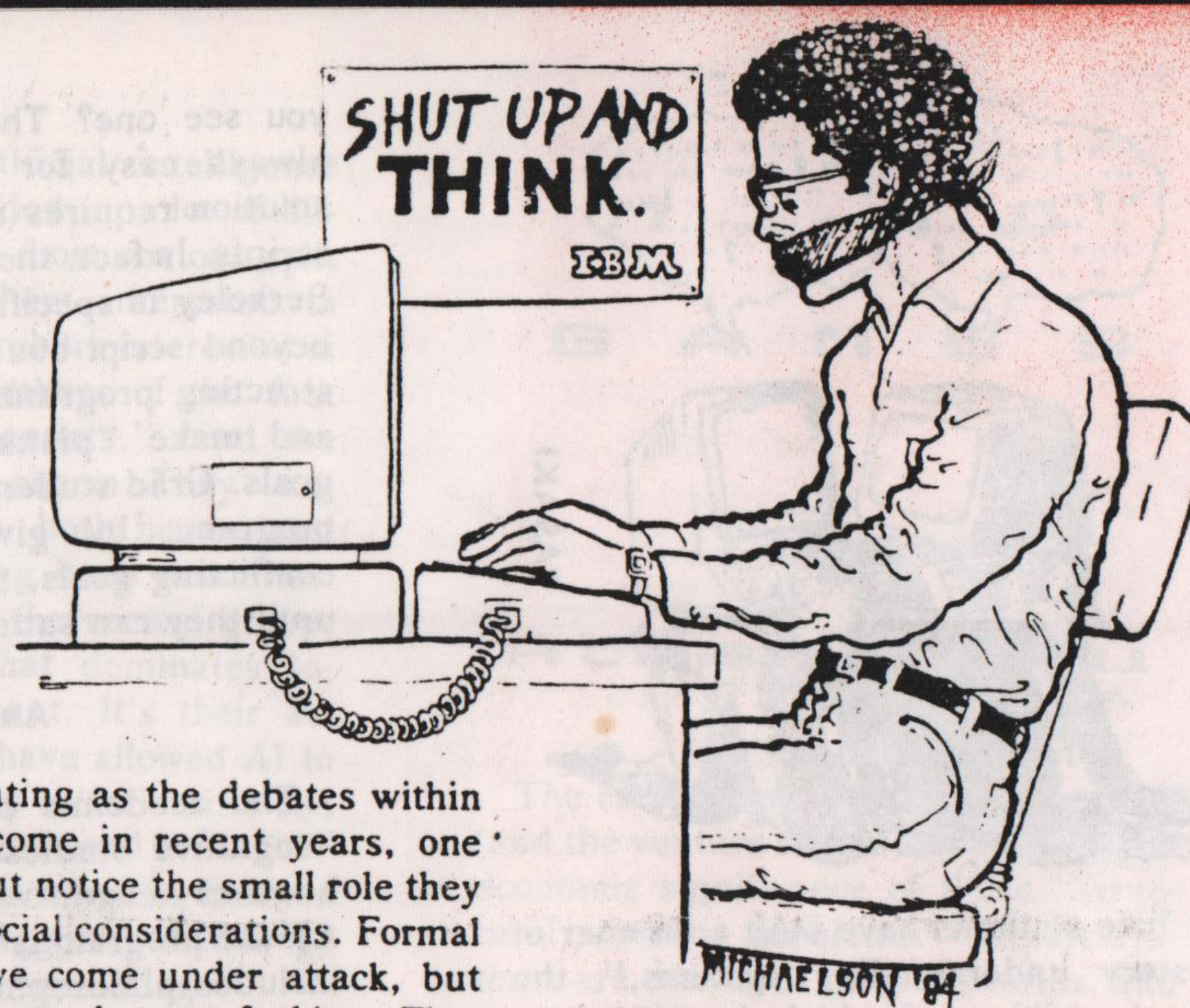
In the real world of AI, Dreyfus's notion of being "trained into a culture" is so far beyond the horizon as to be inconceivable. Far from having societies, and thus learning from each other, today's AI programs rarely even learn for themselves. There may finally be some exceptions, like Doug Lenat's EURISKO, but most programs start from scratch, with only what the programmers and knowledge engineers have given them, each time they're turned on.

Few AI scientists would accept Dreyfus's claim that real machine intelligence requires not only learning, but bodies and culture as well. Most of them agree, in principle if not in prose, with their high priest, MIT's Marvin Minsky. Minsky believes that the body is "a tele-operator for the brain," and the brain, in turn, a "meat machine."

The Dark Side of AI

"Technical people rely upon their ties with power because it is access to that power, with its huge resources, that allows them to dream, the assumption of that power that encourages them to dream in an expansive fashion, and the reality of that power that brings their dreams to life."

—David Noble,
The Forces of Production



As fascinating as the debates within AI have become in recent years, one can't help but notice the small role they allocate to social considerations. Formal methods have come under attack, but generally in an abstract fashion. That the prestige of these methods might exemplify some imbalance in our relationship to science, some dark side of science itself, or even some large social malevolence—these are thoughts rarely heard even among the critics of scientific arrogance.

For that reason, we must now drop from the atmospherics of AI research to the charred fields of earth. The abruptness of the transition can't be avoided: science cloaks itself in wonder, indeed it provides its own mythology, yet behind that mythology are always the prosaic realities of social life.

When the first industrial revolution was still picking up steam, Fredrick Taylor invented "time/motion" study, a discipline predicated on the realization that skill-based manufacturing could be redesigned to eliminate the skill—and with it the autonomy—of the worker. The current AI expert systems' insight that much of human skill can be extracted by knowledge engineers, codified into rules and heuristics, and immortalized on magnetic disks is essentially the same.

Once manufacturing could be "rationalized," automation became not only possible, but in the eyes of the faithful, necessary. It also turned out to be terrifically difficult, for reality was more complex than the visions of the engineers. Workers, it turned out, had lots of "implicit skills" that the time/motion men hadn't taken into account. Think of these skills as the ones managers and engineers can't see. They're not in the formal job description, yet without them the wheels would grind to a halt. And they've constituted an important barrier to total automation: there must be a human machinist around to ease the pressure on the lathe when an anomalous cast comes down the line, to "work around" the unevenness of nature; bosses must have secretaries, to correct their English if for no other reason.

Today's latest automation cr. "adaptive control," is intended to continue the quest for the engineer's grail—the total elimination of human labor. To that end the designers of

factory automation systems are trying to substitute delicate feedback mechanisms, sophisticated sensors, and even AI for the human skills that remain in the work process.

Looking back on industrial automation, David Nobel remarked that "Men behaving like machines paved the way for machines without men." By that measure, we must assume ourselves well on the way to a highly automated society. By and large, work will resist total automation—in spite of the theological ideal of a totally automated factory, some humans will remain—but there's no good reason to doubt that the trend towards mechanization will continue. Among the professions, automation will sometimes be hard to see, hidden within the increasing sophistication of tools still nominally wielded by men and women. But paradoxically, the automation of mental labor may, in many cases, turn out to be easier than the automation of manual labor. Computers are, after all, ideally suited to the manipulation of symbols, far more suited than one of today's primitive robots to the manipulation of things. The top tier of our emerging two-tier society may eventually turn out to be a lot smaller than many imagine.

As AI comes to be the basis of a new wave of automation, a wave that will sweep the professionals up with the manual workers, we're likely to see new kinds of resistance developing. We know that there's already been some, for DEC (Digital Equipment Corporation), a company with an active program of internal AI-based automation, has been strangely public about the problems it has encountered. Arnold Kraft, head of corporate AI marketing at DEC: "I fought resistance to our VAX-configuration project tooth and nail every day. Other individuals in the company will look at AI and be scared of it. They say, 'AI is going to take my job. Where am I? I am not going to use this. Go away!' Literally, they say 'Go Away!'" (Computer Decisions, August 1984.)

Professionals rarely have such foresight, though we may hope to see this change in the years ahead. Frederick Hayes-Roth, chief scientist at Teknowledge, a Palo Alto-based firm, with a reputation for preaching the true gospel of AI, put it this way: "The first sign of machine displacement of human professionals is standardization of the professional's methodology. Professional work generally resists standardization and integration. Over time, however, standard methods of adequate efficiency often emerge." More specifically: "Design, diagnosis, process control, and flying are tasks that seem most susceptible to the current capabilities of knowledge systems. They are composed largely of sensor interpretation (excepting design), of symbolic reasoning, and of heuristic planning—all within the purview of knowledge systems. The major obstacles to automation involving these jobs will probably be the lack of standardized notations and instrumentation, and, particularly, in the case of pilots, professional resistance." Hayes-Roth is, of course, paid to be optimistic, but still, he predicts "fully automated air-traffic control" by 1990-2000. Too bad about PATCO.

Automating The Military

On October 28, 1983, the Defense Advanced Research Projects Agency (DARPA) announced the **Strategic Computing Initiative (SCI)**, launching a five-year, \$600-million program to harness AI to military purposes. The immediate goals of the program are "autonomous tanks" (killer robots for the Army, a "pilot's associate" for the Air Force, and "intelligent battle management systems" for the Navy. If things go according to plan, all will be built with the new gallium arsenide technology, which, unlike silicon, is radiation resistant. The better to fight a protracted nuclear war with, my dear.

And these are just three tips of an expanding iceberg. Machine intelligence, were it ever to work, would allow



the military to switch over to autonomous and semi-autonomous systems capable of managing the ever-increasing speed and complexity of "modern" warfare. **Defense Electronics** recently quoted Robert Kahn, director of information processing technology at DARPA, as saying that "within five years, we will see the services start clamoring for AI."

High on the list of military programs slated to benefit from the SCI is Reagan's proposed "Star Wars" system, a ballistic missile "defense" apparatus which would require highly automated, virtually autonomous military satellites able to act quickly enough to knock out Soviet missiles in their "boost" phase, before they release their warheads. Such a system would be equivalent to automated launch-on-warning; its use would be an act of war.

Would the military boys be dumb enough to hand over control to a computer? Well, consider this excerpt from a congressional hearing on Star Wars, as quoted in the LA Times on April 26, 1984:

At that, Sen. Paul Tsongas exploded: "Perhaps we should run R2-D2 for President in the 1990s. At least he'd be on line all the time."

"Has anyone told the President that he's out of the decision making process?" Tsongas demanded.

"I certainly haven't, Kenworth (Reagan science advisor) said."

Sen. Joseph R. Biden pressed the issue over whether an error might provoke the Soviets to launch a real attack. "Let's assume the President himself were to make a mistake..." he said.

"Why?" interrupted Cooper [head of DARPA]. "We might have the technology so he couldn't make a mistake."

"OK," said Biden. "You've convinced me. You've convinced me that I don't want you running this program."

But his replacement, were Cooper to lose his job, would more than likely worship at the same church. His faith in the perfectability of machine intelligence is a common canon of AI. This is not the hard-headed realism of sober military men, compelled by harsh reality to extreme measures. It is rather the dangerous fantasy of powerful men overcome by their own mythologies, mythologies which flourish in the superheated rhetoric of the AI culture.

The military is a bureaucracy like any other, so it's not surprising to find that its top level planners suffer the same engineer's ideology of technical perfectability as do their civilian counterparts. Likewise, we can expect resistance to AI-based automation from military middle-management. Already there are signs of it. Gary Martins, a military AI specialist, from an interview in **Defense Electronics** (Jan. '83): "Machines that appear to threaten the autonomy and integrity of commanders cannot expect easy acceptance; it would be disastrous to introduce them by fiat. We should be studying how to design military management systems that reinforce, rather than undermine, the status and functionality of their middle-level users."

One noteworthy thing about some "user interfaces": Each time the system refers to its knowledge-base it uses the idiom "you taught me" to alert the operator. This device was developed for the MYCIN system, an expert on infectious diseases, in order to overcome resistance from doctors. It reappears unchanged, in a system designed for tank warfare management in Europe. A fine example of what political scientist Harold Laski had in mind when he noted that "in the new warfare the engineering factory is a unit of the Army, and the worker may be in uniform without being aware of it."

Overdesigned and unreliable technologies, when used for manufacturing, can lead to serious social and economic problems. But such "baroque" technologies, integrated into nuclear war fighting systems, would be absurdly dangerous. For this reason, Computer Professionals For Social Responsibility has stressed the "inherent limits of computer reliability" in its attacks on the SCI. The authors of **Strategic Computing, an Assessment**, assert, "In terms of their fundamental limitations, AI systems are no different than other

computer systems... The hope that AI could cope with uncertainty is understandable, since there is no doubt that they are more flexible than traditional computer systems. It is understandable, but it is wrong."

Unfortunately, all indications are that, given the narrowing time-frames of modern warfare, the interplay between technological and bureaucratic competition, and the penetration of the engineers' ideology into the military ranks, we can expect the Pentagon to increasingly rely on high technology, including AI, as a "force and intelligence multiplier." The TERCOM guidance system in Cruise Missiles, for example, is based directly on AI pattern matching techniques. The end result will likely be an incredibly complex, poorly tested, hair-trigger amalgamation of over-advertised computer technology and overkill nuclear arsenals. Unfortunately, the warheads themselves, unlike the systems within which they will be embedded, can be counted upon to work.

And the whole military AI program is only a subset of a truly massive thrust for military computation of all sorts: a study by the Congressional Office of Technology Assessment found that in 1983 the Defense Dept. accounted for 69% of the basic research in electrical engineering and 54.8% of research in computer science. The DOD's dominance was even greater in applied research, in which it paid for 90.5% of research in electrical engineering and 86.7% of research in computer sciences.

Defensive Rationalizations

There are many liberals, even left-liberals, in the AI community, but few of them have rebelled against the SCI. Why? To some degree because of the Big Lie of "national defense," but there are other reasons given as well:

- Many of them don't really think this stuff will work anyway.
- Some of them will only do basic research, which "will be useful to civilians as well."
- Most of them believe that the military will get whatever it wants anyway.
- All of them need jobs.

The first reason seems peculiar to AI, but perhaps I'm naive. Consider, though, the second. Bob Wilinsky, a professor at UC Berkeley: "DOD money comes in different flavors. I have 6.1 money... it's really pure research. It goes all the way up to 6.13, which is, like, procurement for bombs. Now Strategic Computing is technically listed as a 6.2 activity [applied research], but what'll happen is, there'll be people in the business world that'll say 'OK, killer robots, we don't care,' and there'll be people in industry that say, 'OK, I want to make a LISP machine that's 100 times faster than the ones we have today. I'm not gonna make one special for tanks or anything.' So the work tends to get divided up."



Actually, it sounds more like a co-operative effort. The liberal scientists draw the line at basic research; they won't work on tanks, but they're willing to help provide what the anti-military physicist Bruno Vitale calls a "rich technological menu," a menu immediately scanned by the iron men of the Pentagon.

Anti-military scientists have few choices. They can restrict themselves to basic research, and even indulge the illusion that they no longer contribute to the war machine. Or they can grasp for the straws of socially useful applications: AI assisted medicine, space research, etc. Whatever they choose, they have not escaped the web that binds science to the military. The military fate of the space shuttle program demonstrates this well enough. In a time when the military has come to control so much of the resources of civil society, the only way for a scientist to opt out is by quitting the priesthood altogether, and this is no easy decision.

But let's assume, for the sake of conversation, that we don't have to worry about militarism, or unemployment, or industrial automation. Are we then free to return to our technological delirium?

Unfortunately, there's another problem, a problem for which AI itself is almost the best metaphor. Think of the images it invokes, of the blurring of the line between humanity and machinery from which the idea of AI derives its evocative power. Think of yourself as a machine. Or better, think of society as a machine—fixed, programmed, rigid.

The second problem is bureaucracy, the programmed society, the computer state, 1984.

Of course, not everyone's worried. The dystopia of 1984 is balanced, in the popular mind, by the utopia of flexible, decentralized, and now intelligent computers. The unexamined view that micro-computers will automatically lead to "electronic democracy" is so common that it's hard to cross the street without stepping in it. And most computer scientists tend to agree, at least in principle. Bob Wilinsky, for example, believes that the old nightmare of the computer state is rooted in an archaic technology, and that "as computers get more intelligent we'll be able to have a more flexible bureaucracy as opposed to a more rigid bureaucracy..."

Utopian may not be the right word for such attitudes. The utopians were well-meaning and generally powerless; the spokesmen of progress are neither. Scientists like Wilinsky are well-funded and often quoted, and if the information age has a dark side, they have a special responsibility to bring it out. It is through them that we encounter these new machines, and the stories they choose to tell us will deeply color our images of the future. Their optimism is too convenient; we have the right to ask for a deeper examination.

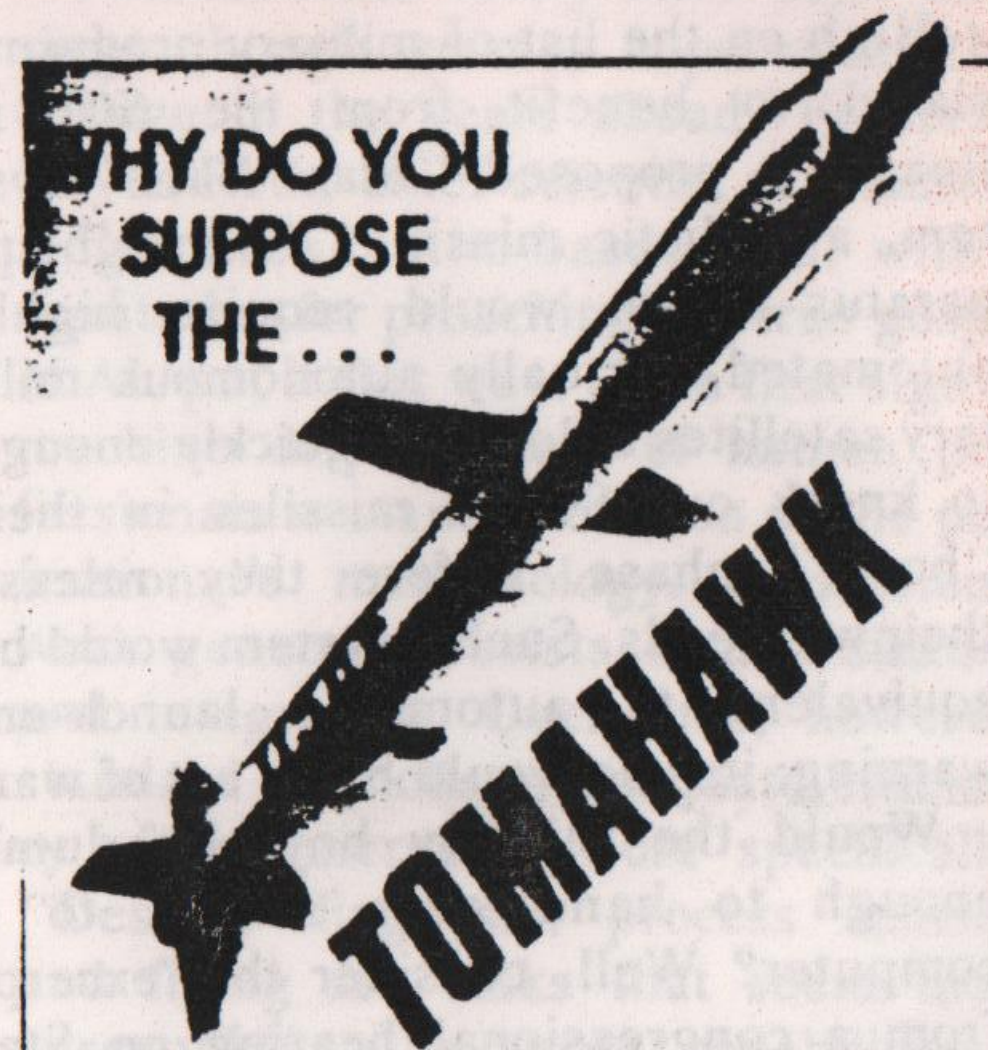
Machine Society

Imagine yourself at a bank, frustrated, up against some arbitrary rule or procedure. Told that "the computer can't do it," you'll likely give up. "What's happened here is a shifting of the sense of who is responsible for policy, who is responsible for decisions, away from some person or group of people who actually are responsible in the social sense, to some inanimate object in which their decisions have been embodied." Or as Emerson put it, "things are in the saddle, and ride men."

Now consider the bureaucracy of the future, where regulation books have been replaced by an integrated information system, a system that has been given language. Terry Winograd, an AI researcher, quotes from a letter he received:

"From my point of view natural language processing is unethical, for one main reason. It plays on the central position which language holds in human behavior. I suggest that the deep involvement Weizenbaum found some people have with ELIZA [a program which imitates a Rogerian therapist] is due to the intensity with which most people react to language in any form. When a person receives a linguistic utterance in any form, the person reacts much as a dog reacts to an odor. We are creatures of language. Since this is so, it is my feeling that baiting people with strings of characters, clearly intended by someone to be interpreted as symbols, is as much a misrepresentation as would be your attempt to sell me property for which you had a false deed. In both cases an attempt is being made to encourage someone to believe that something is a thing other than what it is, and only one party in the interaction is aware of the deception. I will put it a lot stronger: from my point of view, encouraging people to regard machine generated strings of tokens as linguistic utterances, is criminal, and should be treated as criminal activity."

The threat of the computer state is usually seen as a threat to the liberty of the individual. Seen in this way, the threat is real enough, but it remains manageable. But Winograd's letter describes a deeper image of the threat. Think of it not as the vulnerability of individuals, but rather as a decisive shift in social power from individuals to institutions. The shift began long ago, with the rise of hierarchy and class. It was formalized with the establishment of the bureaucratic capitalist state, and now we can imagine its apotheosis. Bureaucracy has always been seen as machine society; soon the machine may find its voice.



CRUISE MISSILE PROGRAM HAS SELECTED BREEZE-ILLINOIS CABLES FOR ITS ELECTRICAL INTERCONNECTIONS?

We are fascinated by AI because, like genetic engineering, it is a truly Promethean science. As such, it reveals the mythic side of all science. And the myth, in being made explicit, reveals the dismal condition of the institution of science itself. Shamelessly displaying its pretensions, the artificial intelligence reveals as well a self-serving naivete, and an embarrassing entanglement with power.

On the surface, the myth of AI is about the joy of creation, but a deeper reading forces joy to the margins. The myth finally emerges as a myth of domination, in which we wake to find that our magnificent tools have built us an "iron cage," and that we are trapped.

Science is a flawed enterprise. It has brought us immense powers over the physical world, but is itself servile in the face of power. Wanting no limits on its freedom to dream, it shrouds itself in myth and ideology, and counsels us to use its powers unconsciously. It has not brought us wisdom.

Or perhaps the condition of science merely reflects the condition of humanity. Narrow-mindedness, arrogance, servility in the face of power—these are attributes of human beings, not of tools. And science is, after all, only a tool.

Many people, when confronted with AI, are offended. They see its goal as an insult to their human dignity, a dignity they see as bound up with human uniqueness. In fact, intelligence can be found throughout nature, and is not unique to us at all. And perhaps someday, if we're around, we'll find it can emerge from semiconductors as well as from amino acids. In the meantime we'd best seek dignity elsewhere. Getting control of our tools, and the institutions which shape them, is a good place to start.

—by Tom Athanasiou

Using Microcomputers for Power Structure Research

The use of a modest dual-drive microcomputer will allow fast access to a database of 15,000 names of groups and individuals, compiled from about 80 muckraking books published since 1964 and numerous periodicals since 1973. The areas covered include the intelligence community, big business, Latin America, the East Coast foreign policy establishment, domestic surveillance, assassination theory, and the right-wing.

Each of the names has from one to over thirty alphabetized sources displayed under it. When the name has been located in or associated with a foreign country for a specific period of years (which is true of about 7,000 names), this information is also displayed. Access time for a single name is under ten seconds (or faster for hard disk), and for all names associated with a country during a time frame is under five minutes. Another search shows the distribution of entry-years for a particular country from 1946-85. Name and area searches may be stacked up to forty deep by the user to save time and effort; and printouts are optional.

The entire database fits on four sides of common double-density, five-and-a-quarter inch floppies. If single-sided drives are used, the program prompts for the floppy it needs to find the information requested. If a hard disk or dual double-sided drives are being used, the disk prompting is not needed. The software is written in Microsoft BASIC and has been compiled for CP/M and IBM PC-DOS. It is available for Osborne, Kaypro, Morrow and PC-DOS 1 or 2. The database can be expanded or a new one started using two programs other than the search program. A hard disk is needed for expansion, but a new database may be started with only dual floppy drives. Since nothing is written down, name entry is fairly fast. The working file can be saved on disk at any time, and continued later.

A computer to run this program costs about \$1000, and a printer another \$300. If the computer will also be used for correspondence or camera-ready word processing, a letter-quality printer may be preferred, which is closer to \$500-\$900, depending on speed and features. A hard disk holds several times the data in this database, and costs about \$2300. Progressive groups are using computers to produce newsletters and prepare copy for typesetters, often by using the bundled software included in the price of the computer. Many typesetters offer substantial discounts for copy on disks, since it saves retyping. For the editor, proofreading is simplified by doing it on the computer with the aid of a spelling checker.

Another program is available which edits and prints small subscription lists. With dual single-sided floppies, about 2,000 names, addresses and expiration codes can be entered. The printout is on standard fanfold label paper, two or three labels wide, sorted alphabetically or by zip code.

These programs and database are available to progressive groups and individuals free of charge. Because of the large amount of intelligence community data, disclosure of the database should be discrete and the use of the database for advertised searches available to the public is not recommended. The Intelligence Identities Protection Act would appear to exclude public domain data, but an adverse political climate could generate pressure for prosecution under the vague provisions of the Act.

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AGEE, P. INSIDE THE COMPANY 1975
 AGE, P. WOLF, L. DIRTY WORK 1979
 AGE, P. WHITEPAPER WHITENASH 1981
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 WISE, D. INVINCIBLE GOVERNMENT 1974

AREAS IN USE

AFGHANISTN-AF	ALBANIA-AB	ALGERIA-AL	ANGOLA-AN	ARGENTINA-AR	AUSTRALIA-AS	AUSTRIA-AU	BAHAMAS-BA
BAHRAIN-BH	BALESH-BS	BANGLADESH-BG	BANGLADESH-BG	BENIN-DA	BOLIVIA-BO	BOTSWANA-BT	BRAZIL-BR
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GRENADA-GN	GUATEMALA-GT	GUINEA-GI	GUYANA-GU	HAITI-HA	HONDURAS-HO	HONGKONG-HK	HUNGARY-HU
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PRINTOUTS OF SAMPLE SEARCHES

ANNUAL COUNT FOR CHILE

distribution of entry-years for area CH

1946: 1	1956: 7	1966: 42	1976: 137
1947: 1	1957: 11	1967: 40	1977: 77
1948: 1	1958: 13	1968: 55	1978: 58
1949: 1	1959: 11	1969: 46	1979: 21
1950: 3	1960: 13	1970: 185	1980: 13
1951: 2	1961: 15	1971: 134	1981: 13
1952: 2	1962: 25	1972: 131	1982: 6
1953: 2	1963: 26	1973: 223	1983: 5
1954: 3	1964: 42	1974: 132	1984: 5
1955: 6	1965: 40	1975: 115	1985: 0

entry-years = 1664 entries = 584 years per entry = 2.85

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 URIBE, A. BLACK BOOK... CHILE 1975 (21-3)

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COVERT ACTION INFO BLTN MAGAZINE W/83 (17)
 LERNOUX, P. CRY OF THE PEOPLE 1982 (26-7)

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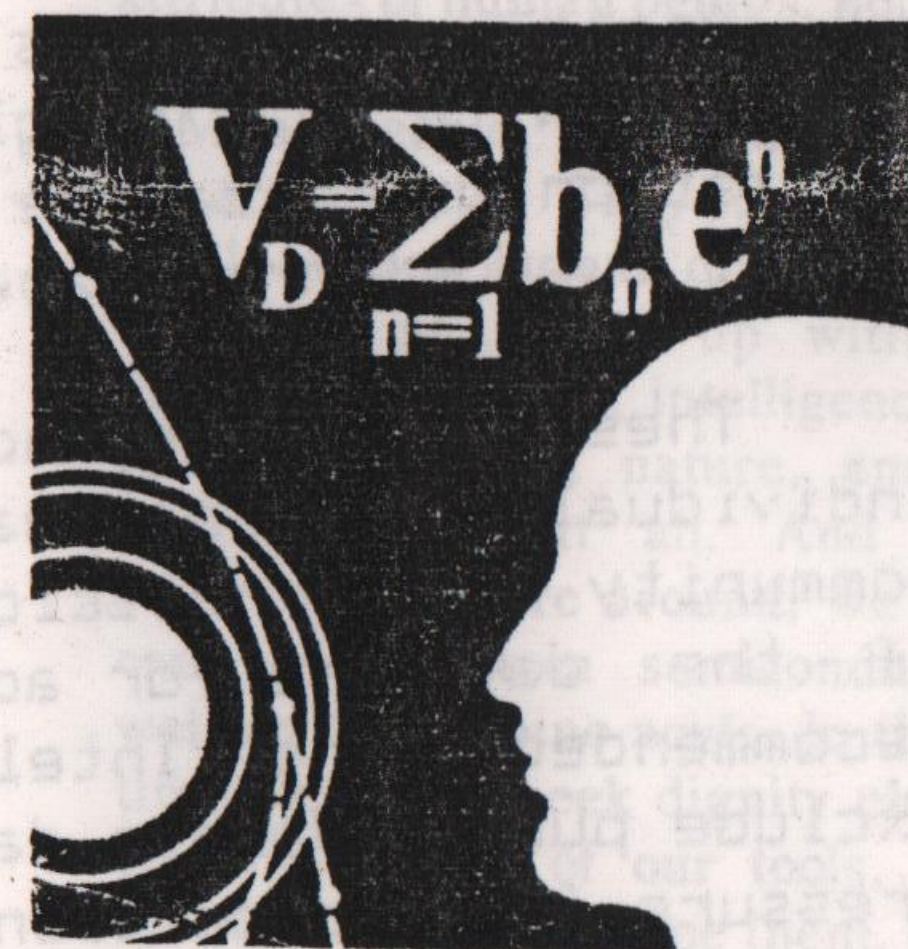
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MOTOROLA INC.
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Computers — to use or not to use: A Reply

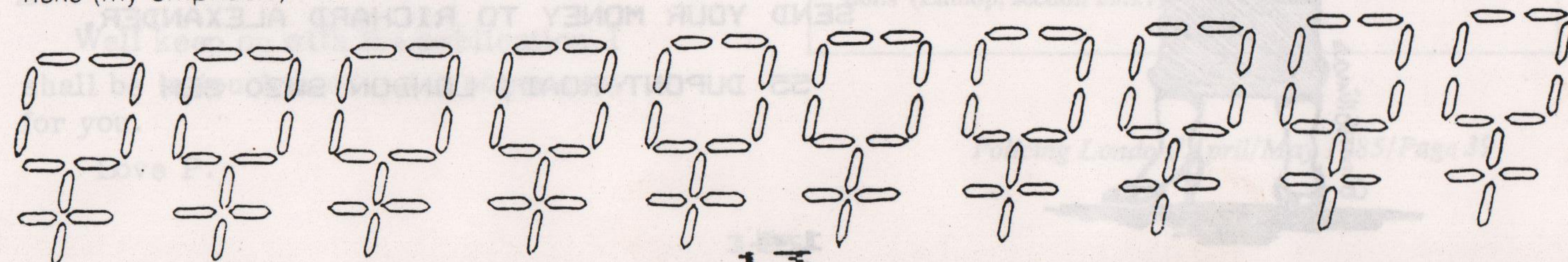
How pleased I was to see on WFLOE winter magazine cover *Computers* listed under *Third World connections*. The contents list subtitles the article 'Computers — to use or not to use'. For me there is no doubt in my mind, heart of spirit that we should not use computers. But I have so far found myself alone with my conviction that the use of computers is not compatible to my/our ends. My reasons (some of which have nothing to do with 'reason') are many and connected. What has pressed me into writing this was my disappointment in what was offered as a debate on 'to use or not to use'. It was more like how to get the most out of your computer. There was an acknowledgement of debate as to whether computers can be used in a non-capitalist, non-authoritarian and non-bureaucratic way, and a list of four reasons why we should not use them, but these are dismissed by 'Anyway, I'm getting away from the facts'. Well, to me it is a fact that third world women are going blind after three years of work on computer components; that this work is part of their limited choice to starve or become prostitutes. And this fact does also apply to electronic washing machines etc. ... Another aspect of the racism computers depend on and perpetuate is that 'much of the drudgery' they can relieve us of, is that the 'us' is a First World privileged elite, in world terms ... and those are my terms, as a woman and eco-feminist. I would like to quote Wilmette Brown (and Virginia Woolf again) from *Black Women and the Peace Movement*: 'The terms of our struggle for peace are that the direction and the organisational priorities that we need to carry out at any particular moment guarantee that the peace movement not grow at the expense of those of the bottom. Otherwise the peace movement will grow, but accommodate war'. For peace read women's liberation, for we will not have one without the other.

To make visible the life and words of Third World, Afro-American and native women as WFLOE makes a point of doing, and then let slide the tokenism displayed by the 'getting away from the facts' attitude is something we as a network must challenge. And just in case we think we might be included in the privileged minority whose lives are to be improved by computers, I refer to *The Guardian* (March 8, 1984) on a report on computers to be presented at the TUC Womens conference: 'Women workers are likely to suffer disproportionately through the introduction of new techniques'. And the position of women who remain with jobs working with computers does not sound too attractive: 'While women workers share with male colleagues all the problems new technology brings, they also have to cope with the problems of commitments outside work, their limited education and training opportunities, and extra health risks (my emphasis).

Another listed problem is that they were built firstly to meet military and secondly big business needs; that small business and leisure usage has been a side effect. No mention of the radiation side effects, although Rosalie Bertell gives a clear report in the article *The Health Hazards of Visual Display Terminals* (WFLOE winter magazine, and see also chapter three in *Reclaim The Earth*). The thought of the numerous children who regularly are exposed to this radiation horrifies me. The cumulative effect through generations leading to infertility connects with women's struggle in reclaiming childbirth from technology. This technology, its links with silicone chips and computers, is for me a prime symptom of male control of women and nature. We do not need these things. We could use 'alternate technology' to relieve us of drudgery, which would be cheap and simple enough to be accessible world wide. Using computers takes us yet another step away from living in balance with nature. As Carrie Dann, a Native American woman says in *March Outwrite*: 'We get all that we need from Mother Earth, for our lives, our religion and our life are tied together; we cannot separate them.' We read in *The Dreamtime* (WFLOE winter issue) how Aboriginal people are losing their sacred rites. Their religion and their life are separated. It is part of their oppression and it is part of ours.

I went to America in 1981 and there first heard about experiments at Stamford University using human volunteers who were paid. After complaints from volunteers the research stopped using them, but presumably did not cease, as non-volunteers are readily available in hospitals, especially mental hospitals, the largest of which are military mental hospitals. The research concerns micro-implants, in the eyes and brain. These implants act as transmitters; all that is seen through the camera-eye is transmitted and can be picked up on a TV screen and recorded. The same with the brain waves, similar to EEG used in hospitals. The implications for use in espionage, diplomacy, etc. are far reaching. An obvious development this line of research could take is that the transmitters also become receivers, with two-way transmission. In other words, the creation of human robots.

Last summer there was a short-lived expose of a bird sanctuary which sold eggs to Birmingham University. These eggs were hatched for experiments using implants (no details given as far as I know). The protest seemed to focus on the fact that although the birds continued to live a healthy life and were not used to test chemicals nor were infected, they had to be killed by law after six months. These animal experiments bring us again through animal liberation to birth technology, test



tube fetuses and genetic interference.

Members of my local Labour party told me about the Bilderberg Project. This is an EEC computer being built in Brussels. The technologists working on the project have nicknamed their computer 'The Beast'. It is supposed to take 10 years to build and will eventually have the capacity to hold 20 pages of information on everyone. They were not sure who 'everyone' was, but I dare say everyone in the First World would do for a start. The project is a major contributor towards the cashless society, part of the EEC/IMF/USA plans for tomorrow's Europe in which Britain has been designated a non-manufacturing but hi-tech area. Of course, the trade unions would never have it, so they have to go first. Note that the Coal Board last year got an American chairman. American industry has an excellent record for weakening and dissolving unions, and the British coal industry is being run down in favour of American nuclear technology.

American economic influence and imperialism in Europe has been reinforced by computer imports, especially in the military world. The anti-American attitude of British people that was so strong after the second European tribal war has disappeared; correspondingly Russia (the Soviet Union) has gone from being a European ally to being part of the Asian menace, the enemy. The enemy which, as Susan Griffin states, is created by us through enemy-creating thought and pornography. A year and a half ago Leonie Caldicott told me that instead of cash it is planned we all have a number, like a bank account or National Insurance number, and that research is underway to find some way of marking our wrists invisibly with a ray which could be read off a computer at, for example, a supermarket exit. The Bible, in Revelations (chapter 13, verses 16-18) says

'And he (the beast) causeth all, both small and great, rich and poor, free and bond, to receive a mark in their right hand, or in their foreheads: And that no man might buy or sell, save he that had the mark, or the name of the beast, or the number of his name. Here is wisdom. Let him that hath understanding count the number of the beast: for it is the number of a man; and his number is six hundred threescore and six' (666). Aleister Crowley named himself 'The Beast' and the numerology of the occult gives the beast the number 999 (or 666 inverted). The BFPO (British Forces Post Office) number for the Falkland Islands is 999. I would be interested to hear more on any of these things. I know I have just pieced together things I have heard over the last few years, and I found it particularly hard to talk to many women about the implants when I first returned from the US.

But times are changing fast; such concepts we are more able to believe possible as we grasp more deeply the degree of women-hatred and control of nature that patriarchy desires. I may have yet to really convince you, or anyone, how absolutely incompatible to our ends the use of computers is for us as feminists. And I did admit that some of my reasons for this belief may seem far from reasonable. But I hope I have contributed something new to the computer debate, because I do not hear anyone talking about the issue from a spiritual/religious/psychic point of view. Or from a political/economic/ecology perspective in terms of distribution of resources. Therefore for me the debate on computers, to use or not to use, is indeed an eco-feminist question and has so far been unbalanced. And I am left considering whether or not to renew my subs to computer-aided WFLOE network, magazine and mailing list, for I believe our means must be compatible with our aims, otherwise we will accommodate war, and as long as there is war women will suffer.

Jill Raymond



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Dear Black Chip,

It was a pleasant surprise to receive your publication. So far very few Anarchists have bothered to accept the existence of computers, and even fewer have attempted to learn how to use them.

As Pan points in Issue 1, these machines can easily put someone off, basically because they are really fucking boring, very hard to understand, and have the prospect of providing absolutely no use at all.

Computers have become the mechanical lepers of the Anarchist movement, I suspect because most Anarchists were too "old" when they became fashionable, and the general feeling is to either smash them, throw them out of windows, or pour coca cola into their circuitry.

They are here to stay, used to make money for the money-makers, used to keep files, send bills, to keep track on people.....

We can't throw all these machines out of the window. We should start stealing them and put them to our own purposes. One of the main problems with the Anarchist movement is the lack of contact and co-ordination amongst us, possibly because we delude ourselves into believing that we are all working "underground".

Computers can be used to store information, which can only be accessed by the User, lists of resources, skill sharers, outlets, contacts etc. would be useful to us.

The less secretive information could be made available on cassette form for various groups/individuals, and links with Anarchists becomes much more realistic than the information from the odd traveller or letter. Computer 'messages' can be sent easily over the telephone, our own telex system.

The question facing us is whether or not we will take up the challenge of bothering to learn how to use a computer and then finding a useful function for it.

We'll keep on with the publication, I shall be in touch soon with some copy for you.

Love P.

Interception of computer data

Interception of computer data

In a written answer to Parliament (*Hansard* 26.2.85), the Home Secretary announced that a warrant issued under the Interception of Communications Bill would 'cover any form of communication ... including the transmission through them of computer data.' Thus the Bill allows for the security services to intercept computer information as it is transferred between computers. As the current trend is to decentralise computers based in one location, and use telecommunications to link computers in many locations, the potential for uncontrolled interception of much personal information increases as more modern technology is deployed.

The Bill does not give the security services the power to access data that is not being transmitted. It does, however, facilitate the access to information sent between computers as it is transmitted. This, coupled with the secrecy maintained by section 27 of the Data Protection Act, will provide a cloak that will be impenetrable.

Under the Data Protection Act:

- Security services are not covered by the Data Protection Act if any Cabinet Minister signs a certificate. Via this certificate they can obtain information from any collection of personal data for any purpose without breaking the provisions of the Data Protection Act.
- The registrar (the data protection ombudsman and watchdog) is unaware of any certificate that is signed by a Cabinet Minister except when he accidentally finds out that a certificate has been issued. He has no knowledge of the scope of security services data processing. (*Hansard* 17.12.84)
- The Home Secretary does not know whether any of his Cabinet colleagues has signed a certificate (*Hansard* 25.2.85). This compares unfavourably with the position in relation to telephone tapping warrants, where the Home Secretary or Foreign Secretary sign warrants.
- Once a certificate has been signed by a minister, then there is no need to renew that certificate (*Hansard* 25.2.85) unless there is an administrative reason for doing so.
- There is no obligation for the Home Secretary to have any procedures that examine security, accuracy and relevance of the data stored on security service systems (*Hansard* 5.7.84).

This lack of accountability in controlling security service data processing is compounded by technology. For example, it is possible for £3,500 to buy a device that is capable of recording details (who made the call, where to, how long) from up to 500 telephone lines. *The Observer* (19.2.84) described how the Ministry of Defence had placed a secrecy order on JCL Data, a firm in Barnsley. This patent covered a device which prevented the copying of data, and it was reported that the Government Communications Headquarters (GCHQ) were anxious that this would be used to protect data held on computer. Put another way, GCHQ were anxious to obtain all rights to a patent that could hinder their interceptions.

In conclusion, it is pertinent to recall the words of the Lindop Committee on Data Protection whose report was disregarded by the government when they devised their data protection legislation. They argued that in their supervisory body, there would be somebody with security clearance who would 'assure for many other public servants that they (the security service) will not stray beyond their allotted functions' (Lindop, section 23.21).